

A SURVEY OF SECURED VOTING SYSTEM USING FINGERPRINT SCANNER

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ABSTRACT--THE main objective of this project is to avoid the false entry of the voters in the election process. Voting can be done at home by using fingerprint scanner method. The main idea of this project is to provide secure methods of voting through the fingerprint scanner. The election process is mandatory in the world. To develop the voting system based on the finger print acceptance of the voters with the program uploaded in the Arduino. By using the present voting system, it takes more time for the remaining voters to vote as it is necessary to avoid the chaos. Therefore, results in casting less number of votes. Validation of voters become incorrect during this process. People inside the election booth and third person entry may result in false count of voters. Normally elections are conducted for the Indian constitution and parliamentary legislation. This paper discusses different voting techniques and the issues faced there by suggesting techniques to overcome.

Keywords--voting, fingerprint scanner, paper voting, Aadhar ID, online voting, DRE voting.

I. INTRODUCTION

Voting:-

Voting is a technique for a gathering of individuals so as to make an aggregate choice or to express the sentiment for the up-and-comers. Vote is a formal articulation of an individual decision of the individuals for choosing the competitors or the ideological groups. Casting a ballot is obligatory in each nation each individual can have the option to cast a ballot at 18 years old years. In earlier years they are a few kinds of casting a ballot framework. India is a just nation so casting a ballot is obligatory for the individuals. Casting a ballot framework:- They are various sorts of casting a ballot strategies are accessible in India. They are 5 kinds of casting a ballot techniques in India.

Voting system

They are different types of voting methods are available in India. They are 5 types of voting methods in India.

1. Paper based voting methods.
2. Electronic voting machine
3. Online voting method.
4. Postal voting method.
5. Direct recording electronic voting method.

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1. Paper based voting system: -

The most common voting method is called as paper based voting method. In this methods the people can be able to mark their vote in the paper by their preference. Paper based voting is also called as the ballot letters. The process of this voting method is marking with the letters assigned to that party. The voters have their wish to vote their parties which party they want.

2. Electronic voting machine: -

Electronic voting machine can be either manual or electronic. In this electronic voting machine, the people cast their votes by pressing the button for each choice connected by a cable to an electronic ballot box. They can confirm their votes when the voter photo is displayed on the screen.

3. Online voting method: -

Nowadays some countries are using Online voting. Estonia is the first country to implement Online voting method. This method was first used in the year 2005 in the local election. Online voting method is very easy method of voting system in which the voters can be able to cast their votes from their home.

4. Postal voting method:-

In this method the people can be able to send their vote to the post in the ballot. Many countries are practising this method. People who have no time for voting can cast their vote through the post

5. Direct recording electronic voting method: -

In this system a mechanical or electronic component can be used such as touch screen was used to provide ballot display. The machine was programmed to record voting data and ballot images, count for the votes. This is very easy method of voting.

II. LITERATURE SURVEY

1. Paper based voting system

Asghar Tavakoly, et.al [1] 2012. The paper based voting method gives privacy for the voters and election verifiability and integrity. The ballot voting method has two side, one is positive side and the another side is negative side. Voters puts the ballot inside of an electronic device and the voters can be able to choose the candidate on the device screen.

Supeno Djanali, et.al [2] 2018. The paper based voting system does not consider the integrity of the ballot paper and the vote on it. Today voting can be performed with the help of information technology or the electronic voting.

John Kelsey, et.al [3] 2011. Paper based voting system was first started in the year of 1960. Nowadays Paper based voting system has become more popular. In paper based voting system was organised by the people where votes are cast and counted by the hand, using paper ballots but counted electronically.

Andrew Regenscheid, et.al [4] 2010. The prerequisite of conventional democratic framework is relevant for e-casting a ballot framework. The target of casting a ballot is to permit voters to practice their entitlement to express their decisions with respect to explicit issues, resident activities, sacred changes to pick their legislature and political delegates. The vote is in our grasp to pick which government can run the nation.

III. ELECTRONIC VOTING MACHINE

Sanjay Kumar, et.al [5] 2014. Fingerprint matching is the most popular and reliable technique used in the present day election process. There are several steps in this voting process they are 1.Authentication, 2.Vote, 3. Vote counting, 4. vote verification.

R.Murali Prasad, et.al [6] 2013. Voting is a method by which the voters can appoint their representatives. In current voting system the voter should show his voter ID card whenever an individual goes to the booth to poll his vote. This process could be a time consuming method as the person needs to check the voter ID card with the list having to confirm it as an authorized card to poll his vote.

Olayemi M, et.al [7] 2017. This was trailed by many democratic frameworks with the expect to improve security and protection ensures, for example, vote honesty and polling form mystery. For instance, Civitas is a pressure safe Internet-based democratic framework, which gives transparently verifiable proof that every one of the votes are effectively included and precisely counted, yet expects voters to confide in their PCs for both vote honesty and protection

Banupirya.N, et.al [8] 2016. This method is used to cast and count the votes and display in the election process. In this paper they have designed the security based voting system to avoid the false entry of the voters. Problems caused by using this method is the incorrect validation of voters, polling booth could be captured, lack of insecurity.

S.Snega, et.al [9] 2018. The design of electronic voting machine with Aadhar and fingerprint done successfully in this paper. The disadvantages of this existing process in this paper can be overcome by eliminating the illegal voting process. In scientific community, little attention has been paid to develop polling systems, i.e., low-risk or small-level public opinion systems, where reasonable level of security, privacy and functionality should be provided to the end user.

IV. ONLINE VOTING METHOD

Himanshu Agarwal, et.al [10] 2017. An online voting system for India election proposed for the first time in this paper. In this system they have to verified the candidate data with the administrator. This model has a greater security in the sense that the voter has the high security password is confirmed before the voting is accepted. In this process the administrator only will finalize the result. It leads to the easier verification of both voters and candidates.

Mr.Nilhil L.K shemkalyani, et.al [11] 2018. Online voting system is designed to count the number of votes done by the voters. This system is divided into number of modules. The modules are administrator module and the user module. The administrator module has the total authority. The user module has the list of candidates and the results of the voters.

B.Arun, et.al [12] 2019. In online voting system voters can cast their vote through online and the internet. For the secure method of voting there are two levels. The user Id and password are used as the first level of security. The second level of the security is called as a face present in the database.

Pallavi Divya, et.al [13] 2018. Online voting system is a software system through which the voters can give their vote by registering themselves on the online website. Each voter has to enter all the basic information such as name, religion, nationalism etc. Online voting is very easy as like the voters can able to cast their vote by sitting at their home.

Himanshu Agarwal, et.al [14] 2017. An online voting system for India election is proposed for the first time in this paper. In this system we have to verify the candidate data with the administrator. The proposed model has a greater security in the sense that the voter has the high security password is confirmed before the voting is accepted. In this process the administrator only will finalize the result. It leads to the easier verification of both voters and candidates.

V. POSTAL VOTING METHOD

Piyush Aggarwal, et.al [15] 2016. In this paper, extensive measure of research work can be discovered identified with structure and usage of secure, verifiable and reasonable emote democratic frameworks for national-level or enormous decisions. Despite the fact that the security and protection prerequisites are indistinguishable in both e-casting a ballot and e-surveying frameworks, the previous framework gives solid security ensures.

Taliha A, et.al [16] 2015. The national-level or on the other hand local decisions require political race leading specialists to give solid start to finish security assurances to voters with least confided in substances and insignificant security suppositions, and without excessively affecting voters with computational and communicational overheads.

Danang Prawira Nugraha, et.al [17] 2014. A few more e-casting a ballot proposition with models were created to give start to finish verifiability, which incorporates the accompanying two head parts: It gives a voter intends to ensure that the vote cast by his/her democratic gadget contains the expected democratic alternative and that no progressions have been performed. It permits voters, examiners and outsider spectators to watch that counted votes compare to the cast votes.

Polaiah Bojja, et.al [18] 2013. In this paper the postal voting is mainly based on the people to cast their votes in the post. The person need not carry his ID that contains his entire detail. The majority voting systems around the world could follow citizen identification and authentication, voting and recording of votes cast, vote counting, publication of election results.

VI. DIRECT RECORDING ELECTRONIC VOTING METHOD

Haenni, et.al [19] 2017. Haenni and Koenig proposed a democratic framework that utilizes a confided in gadget for casting a ballot over the Internet on an untrusted stage. Right now, the stage is capable of creating encryptions as scanner tags. The voter filters the picked applicant's standardized identification through the devoted

confided in equipment gadget. Later the votes picked by the voter are moved to a believed PC utilizing a shrewd card or a USB connector.

Manpreet Singh, et.al [20] 2018. Right now casting a ballot gadget can record a voter's conduct while he/she examines his/her picked applicant's standardized tag. Moreover, the gadget learns voter's vote An individual is recognized by voter list gave by the Election Commission of India and Voter ID card gave by Indian government. There are a great deal of issues in voter ID card like name misprinting, missing of name, no unmistakable photograph on personal id card, and so forth.

Sunitha patil, et.al [21] 2018. In this paper smart voting system is designed in this smart voting the voters can cast their votes through the mobile phone and avoid all the problems occur in the polling booth. This system can able to count their votes and track their votes in very conventional manner. The disadvantage is that vote can do double entry votes can be made.

Statistical table

Table 1: Literature survey of voting system

S.No	Method of Voting	Year of Establishment	Process of voting	Beneficiary factor Y/N	Drawback
1.	A secure paper-based electronic voting system	2012	The ballot in this voting method has two side, one is positive side and the another side is negative side.	No	Mistakes in counting of votes.
2.	Vote identification and integrity of ballot in paper based voting system	2018	Today voting may be accomplished with the help of records generation or the electronic balloting.	Yes	—
3.	Attacking Paper-based electronic voting systems.	2011	In paper based voting system the validation of votes counted by our hands and the results has been announced.	No	Double entry of votes
4.	Paper based voting system review.	2010	The goal of vote casting is to permit voters to exercise their proper to express their choices regarding precise issues, citizen initiatives, constitutional amendments to select their government and political representatives.	No	Time taking process

5.	Design of secured electronic voting system using fingerprint technique	2014	There are numerous steps in this vote casting procedure they are 1.Authentication,2.Vote,3.Vote counting,4.Vote verification.	Yes	—
6	AADHAR based Electronic Voting Machine using Arduino	2013	In contemporary vote casting system the voter must display his voter ID card whenever an character goes to the sales space to ballot his vote.	Yes	—
7.	Electronic Voting System Using Fingerprint Biometrics	2017	This was seen by utilizing many democratic structures with the plan to upgrade insurance and protection guarantees comprising of vote respectability and voting form mystery.	No	Results are not accurate
8	Design and development of security based voting system	2016	In this paper they have got designed the safety based totally vote casting system to keep away from the false access of the electronics.	Yes	—
9	Online Voting System for India Based on Aadhar ID	2017	The proposed version has a extra security within the sense that the voter has the excessive protection password is confirmed before the balloting is accepted.	No	Not a secure type of voting

10	Smart voting with secure data identification	2018	Several extra e-balloting proposals with prototypes have been advanced to provide give up-to stop verifiability, which incorporates the subsequent main components	Yes	—
11	Online voting system	2018	The modules are administrator module and the consumer module. The administrator module has the full authority. The user module has the listing of applicants and the outcomes of the electorate	No	False number of voting
12	online voting system	2019	In online vote casting gadget citizens can forget their vote through on-line and the internet. For the steady approach of vote casting there are two levels.	Yes	—
13	Online voting system	2018	Each voter has to enter all the basic information which includes name, religion, nationalism etc. Online vote casting is very easy as like the voters can able to cast their vote by means of sitting at their domestic	Yes	—
14	Postal voting method	2014	The proposed model has a greater protection in the experience that the voter has the excessive safety password is confirmed before the voting is accepted. In this technique the administrator handiest will finalize the result.	No	Time consuming process for voting
15	DRE voting method	2018.	In the proposed gadget, the stage is responsible of creating encryptions inside the type of standardized tags. The voter examines the picked applicant's standardized tag through the devoted depended on equipment device.	Yes	—

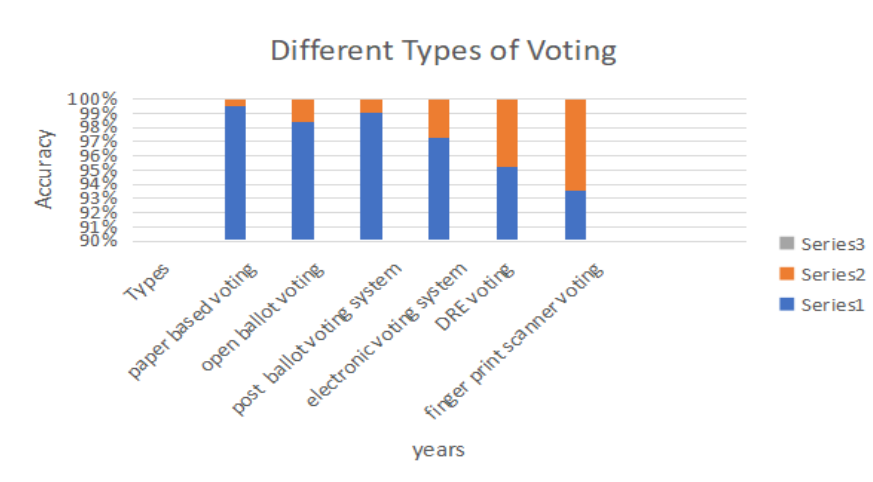


Figure 1: Different types of Voting System

These are the types of the methods available for the voting system. In these methods several drawbacks like double voting, counting problem voter have been identified. To overcome these problems a new method of voting by using fingerprint scanner can be implemented. By using fingerprint scanner method the drawbacks can be avoided.

In fingerprint scanner method the voter at the polling booth need to scan their finger on finger print scanner. If the fingerprint matched the voter is allowed to vote and LCD shows that valid for polling. If the fingerprint is not matched the voter is not allowed to vote and LCD shows that not valid for polling. Arduino microcontroller which can controls the whole voting system.

There are four push button are present they are

1. Enroll/Back
- 2.Delete/Ok
- 3.Up
- 4.Down

Enroll key is used for enrolling new finger impression into the system and the back function as well. When the user want to enroll new finger impression into the system need to press enrol key then LCD ask for the ID and location to store the finger print output. When the user need to select finger ID or location by using another two keys called up/down button. Delete/ok button can be used to delete the location ID or used to store the location ID.

VII. Block Diagram

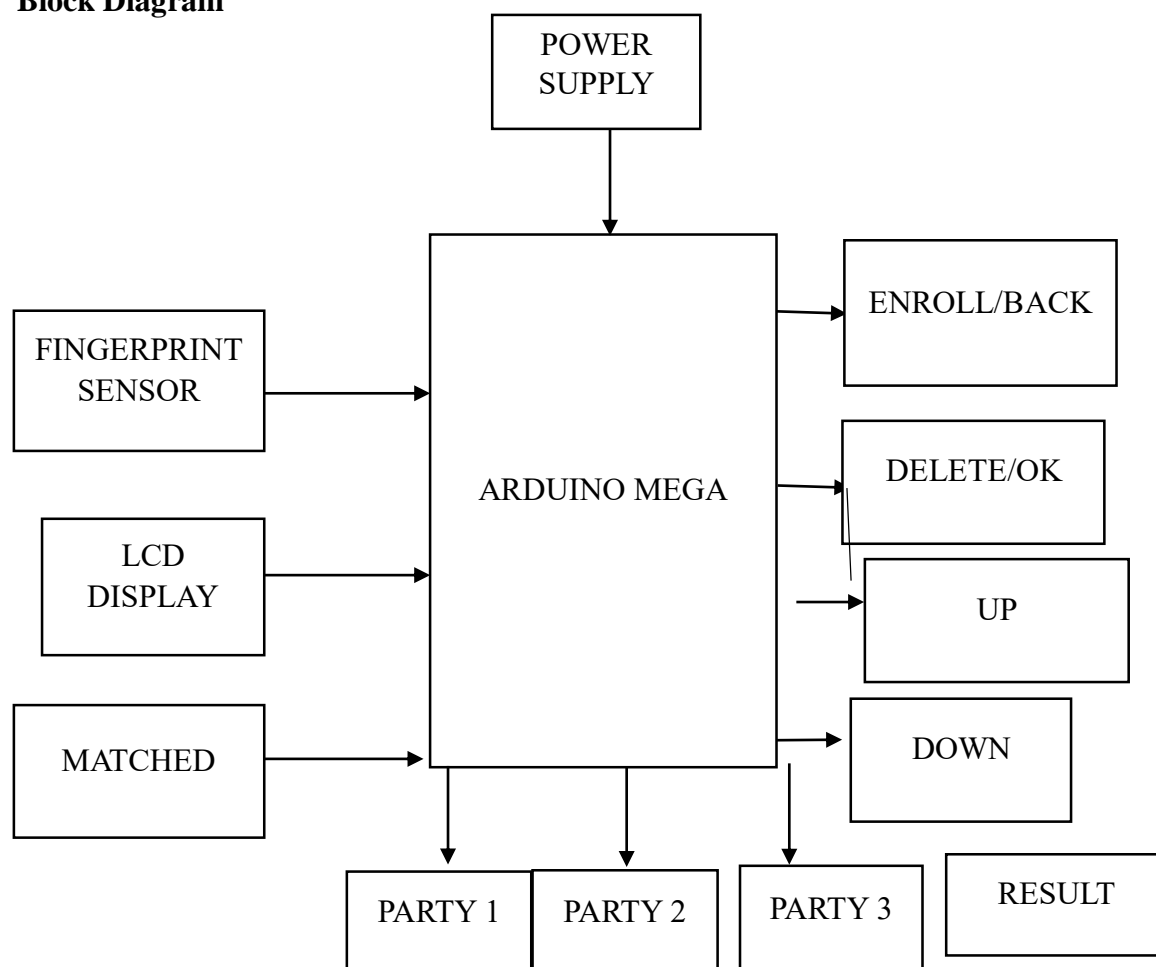


Figure 2: Over all Block diagram

VIII. RESULTS

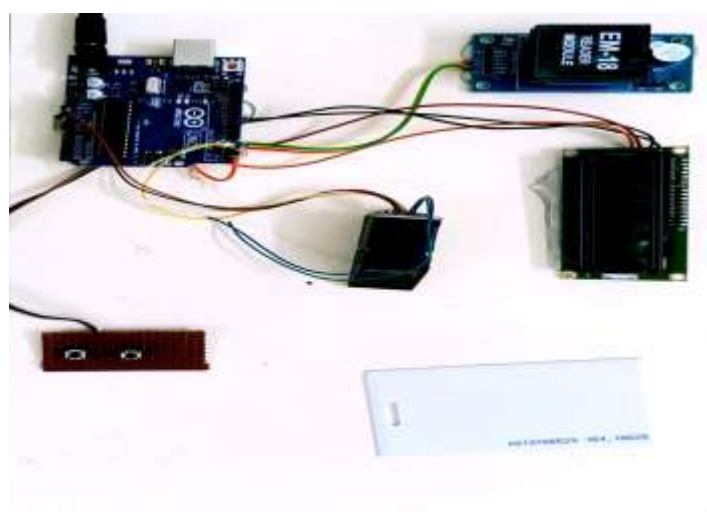


Figure 3: Voting process

IX. CONCLUSION

Our previous work named underpins multi-vote throwing within the sight of untrusted casting a ballot gadgets and gives both give a role as proposed and counted as-cast verifiability to the voters. Typical strategy for casting a ballot doesn't give secure component to connect various votes to a solitary voter, and a verification technique that forestalls non-qualified voters from throwing polling forms. Casting a ballot by paper based doesn't give honesty and legitimacy of the surveying code sheets that are utilized by the voter during vote-throwing stage. Structure of made sure about democratic framework through just unique mark scanner is acceptable. Other democratic framework can mess more up in the democratic procedure. Made sure about strategy for casting a ballot just gives great outcomes in the democratic procedure.

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